7052.0240 WHOLE EFFLUENT TOXICITY.

Subpart 1. **Applicability.** The agency must evaluate and apply whole effluent toxicity (WET) as WQBELs and permit conditions through the following procedures and conditions:

A. no effluent shall exceed 1.0 acute toxic unit (TUa) unless a demonstration is provided under part 7052.0210, subpart 1, that 0.3 TUa can be met at the edge of an approved acute mixing zone; and

B. no effluent shall exceed 1.0 chronic toxic unit (TUc) in the receiving water at the edge of an approved mixing zone under part 7052.0210, subpart 1.

Subp. 2. **Acute and chronic WQBELs.** WQBELs determined under subpart 6 must comply with subpart 1, items A and B, except if the agency determines on an individual permit basis that chemical-specific limitations are sufficient to ensure compliance with subpart 1, items A and B.

Subp. 3. **Permit conditions.** Where the agency determines according to subpart 5 that the WET of an effluent is or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any standard specified in subpart 1 or 2, the following permit conditions must be established:

A. a WQBEL developed under subpart 6;

B. a requirement that a toxicity reduction evaluation be conducted where valid toxicity data indicate exceedance of a WET limitation and when the duration, magnitude, and frequency of exceedance is sufficient to allow completion of a toxic reduction evaluation to determine the pollutant or pollutants causing the exceedance;

C. for any effluent limitation for WET established under subpart 6, a schedule of compliance consistent with part 7052.0260; and

D. a requirement that all WET tests must be conducted according to the methods established in Code of Federal Regulations, title 40, part 136.

Subp. 4. **Insufficient information.** If the agency determines that it lacks sufficient information to establish under subpart 5 whether the WET of an effluent is or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any standard specified in subpart 1 or 2, the following permit conditions must be established:

A. WET testing requirements to generate the data needed to characterize the toxicity of the effluent to aquatic life; and

B. a permit reopener clause to establish WET limitations if any toxicity testing data required under item A and subpart 5 indicate that the WET of an effluent is or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any of the conditions in subparts 1 and 2.

Subp. 5. **Reasonable potential determination.** The agency must apply the factors in Code of Federal Regulations, title 40, section 122.44, paragraph (d)(1)(ii), and use representative data to evaluate the WET of an effluent. The agency must apply the provisions in items A to C to evaluate the reasonable potential of the effluent to exceed a WQBEL.

A. The agency must determine the toxicity of the effluent using the provisions in subitems (1) to (3).

(1) Acute toxicity values collected on the same day for each species must be averaged to represent one daily value. The maximum of all daily values for the most sensitive species tested must be used in the reasonable potential determinations.

(2) Chronic toxicity values collected within the same calendar month for each species tested must be averaged to represent one monthly value. The maximum of all monthly values for the most sensitive species tested must be used in the reasonable potential determinations.

(3) Toxicity values for missing endpoints must be estimated using a default acute-chronic ratio of 10 when data exist for either acute WET or chronic WET, but not for both endpoints.

B. The WET of an effluent has the reasonable potential to cause or contribute to an excursion above 1.0 TUa at the point of discharge or 0.3 TUa at the edge of the acute mixing zone when a mixing zone demonstration has been approved under part 7052.0210 and when the effluent-specific information demonstrates that:

(1) For discharges to streams and rivers:

$$\frac{T(B)(Qd)}{Qd + Qr} > 1.0 \text{ TUa or } 0.3 \text{ TUa, as applicable}$$

Where:

T = Maximum acute toxicity of the effluent measured under item A, subitem (1), in toxic units (TUa)

B = Multiplying factor from part 7052.0370, converting the measured maximum value to a 95th percentile value, except that a CV of 0.6 must be used where less than ten individual WET tests are available

Qd = Effluent design flow

Qr = Dilution flow allowed from the stream

design flow specified in part 7052.0200, subpart 3, item A, subitem (1), including allowance for dilution from a mixing zone demonstration under part 7052.0210; or

(2) For discharges to lakes:

$$T\,(B)(X) > 1.0\ TUa \text{ or } 0.3\ TUa, \text{ as applicable}$$

Where:

T = Maximum acute toxicity of the effluent measured under item A, subitem (1), in toxic units (TUa)

B = Multiplying factor from part 7052.0370 converting the measured maximum value to a 95th percentile value, except that a CV of 0.6 must be used where less than ten individual WET tests are available

X = Dilution ratio established in the mixing zone demonstration under part 7052.0210, subpart 2.

C. The WET of an effluent has the reasonable potential to cause or contribute to an excursion above the chronic standard when the effluent-specific information demonstrates that:

(1) For discharges to streams and rivers:

$$\frac{T\,(B)(Qd) > 1.0\ TUc}{Qd + Qr}$$

Where:

T = Maximum chronic toxicity of the effluent measured under item A, subitem (2), in toxic units (TUc)

B = Multiplying factor from part 7052.0370, converting the measured maximum value to a 95th percentile value, except that a CV of 0.6 must be used where less than ten individual WET tests are available

Qd = Effluent design flow

Qr = Dilution flow allowed from the stream design flow specified in part 7052.0200, subpart 3, item A, subitem (2), including allowance for dilution from a mixing zone demonstration under part 7052.0210; or

(2) For discharges to lakes:

$$T(B)(X) > 1.0\ TUc$$

Where:

T = Maximum chronic toxicity of the effluent measured under item A, subitem (2), in toxic units (TUc)

B = Multiplying factor from part 7052.0370 converting the measured maximum value to a 95th percentile value, except that a CV of 0.6 must be used where less than ten individual WET tests are available

X = 10, which represents a receiving water volume to effluent volume dilution ratio of 10 to 1, unless an alternative mixing zone demonstration is provided under part 7052.0210, subpart 2, that includes a dilution ratio other than 10 to 1 and results in a mixing zone that is no greater than the area of discharge-induced mixing, in which case X equals the dilution ratio established in the demonstration.

Subp. 6. **WQBELs for WET.** The agency must establish WQBELs according to the provisions in items A to D.

A. The acute WET limitation for discharges must be 1.0 TUa, applied as a daily maximum, unless provisions for an acute mixing zone under part 7052.0210 have been established that:

(1) result in compliance, at the edge of an agency-approved mixing zone for streams and rivers, with the acute WET limitation calculated as follows:

$$\text{Acute WET limitation} = \frac{T\,(Qd + Qr)}{Qd}$$

Where:

T = 0.3 TUa

Qd = Effluent design flow

Qr = Stream design flow specified in part 7052.0200, subpart 3, item A, subitem (1), including allowance for dilution from a mixing zone demonstration under part 7052.0210; or

(2) result in compliance, at the edge of an agency-approved mixing zone for lakes, with the acute WET limitation calculated as follows:

$$\text{Acute WET limitation} = T(X)$$

Where:

T = 0.3 TUa

X = The dilution ratio established in the mixing zone demonstration under part 7052.0210, subpart 2.

B. The chronic WET limitation for discharges to streams and rivers, applied as a monthly average, must be calculated as follows:

$$\text{Chronic WET limitation} = \frac{T\,(Qd + Qr)}{Qd}$$

Where:

T = 1.0 TUc

Qd = Effluent design flow

Qr = Stream design flow specified in part 7052.0200, subpart 3, item A, subitem (2), including allowance for dilution from a mixing zone demonstration under part 7052.0210.

C. The chronic WET limitation for discharges to lakes, applied as a monthly average, must be calculated as follows:

Chronic WET limitation = T (X)

Where:

T = 1.0 TUc

X = 10, which represents a receiving water volume to effluent volume dilution ratio of 10 to 1, unless an alternative mixing zone demonstration is provided under part 7052.0210, subpart 2, that includes a dilution ratio other than 10 to 1 and results in a mixing zone that is no greater than the area of discharge-induced mixing, in which case X equals the dilution ratio established in the demonstration.

D. The agency must establish, on an individual permit basis, a monitoring frequency to evaluate compliance with WET limitations.